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FITCH EVEN TABIN AND FLANNERY 120 SOUTH LA SALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			DEAN, RAYMOND S	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

DT

# Office Action Summary

Application No.

10/654,227

Applicant(s)

SARTORI ET AL.

Examiner

Raymond S Dean

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01162004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 41 – 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Durrant et al. (US 6,501,955).

Regarding Claim 41, Durrant teaches a communications controller comprising: - a wireless transmitter and receiver (Column 4 lines 12 – 38, the base station is the communication controller, said base station comprises transceivers); - a resource allocator that is operably coupled to the wireless transmitter and receiver and that is responsive to a wirelessly transmitted signal from a remote unit that is within reception range of the receiver requesting allocation of a communication resource to facilitate transmission of information to the receiver (Figure 1, Column 3 lines 2 – 11, Column 4 lines 4 – 8, Column 4 lines 12 – 38, when the mobile station is in an area that is remote from the base station the base station will allocate the repeater to increase the data rate so that the mobile station can transmit and receive at the high data rate enjoyed by said mobile station when said mobile station is located close to said base station thus there

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will be a resource allocator enabling said allocation); - a relay resource activator that is operably coupled to the resource allocator, such that a relay resource can be activated by the communications controller to improve quality of service for a wireless transmission from the remote unit when transmitting within reception range of the receiver (Figure 1, Column 3 lines 2 – 11, Column 4 lines 4 – 8, Column 4 lines 12 – 38, when the mobile station is in an area that is remote from the base station the base station will allocate the repeater to increase the data rate so that the mobile station can transmit and receive at the high data rate enjoyed by said mobile station when said mobile station is located close to said base station thus there will be a relay source activator enabling said repeater to relay data such that said data rate is achieved).

Regarding Claim 42, Durrant teaches all of the claimed limitations recited in Claim 41. Durrant further teaches means for determining when to activate a relay resource to support a requested allocation of resources to facilitate the transmission of information to the receiver (Figure 1, Column 3 lines 2 – 11, Column 4 lines 4 – 8, Column 4 lines 12 – 38, when the mobile station is in an area that is remote from the base station the base station will allocate the repeater to increase the data rate so that the mobile station can transmit and receive at the high data rate enjoyed by said mobile station when said mobile station is located close to said base station).

Regarding Claim 43, Durrant teaches all of the claimed limitations recited in Claim 41. Durrant further teaches means for providing instructions to a given relay resource comprising at least one of - a particular data transmission rate to expect when receiving the transmission from the remote unit; - a particular data transmission rate to

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use when relaying the transmission to the receiver; - identifying information regarding a particular channel to monitor to receive the transmission from the remote unit; - identifying information regarding a particular channel to utilize when relaying the transmission to the receiver (Column 4 lines 12 – 38, the repeater will provide a particular data transmission rate).

Regarding Claim 44, Durrant teaches all of the claimed limitations recited in Claim 41. Durrant further teaches means for substantially simultaneously activating a plurality of relay resources to improve the quality of service for the wireless transmission from the remote unit (Column 4 lines 12 – 38).

Regarding Claim 45, Durrant teaches all of the claimed limitations recited in Claim 44. Durrant further teaches reception means for receiving relayed transmissions from the plurality of relay resources and for reconstructing the wireless transmission from the remote unit by combining relayed transmissions from at least two of the plurality of relay resources (Column 4 lines 12 – 38, information that is transmitted by the mobile station to the base station is broken down into packets of data, in order for said information transmitted by said mobile station to be reconstructed the packets of data that comprise said information will be combined).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 23, 25 – 31, 36 – 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmutz (US 2002/0031621) in view of Durrant et al. (US 6,501,955).

Regarding Claim 1, Schmutz teaches a method comprising: at a base site: determining a need to receive a wireless transmission from a transmitter that is presently within communications range of the base site (Section 0037 lines 10 – 12, the base station will read the RACH channel to determine if a mobile station within in range of said base station wants to communicate with said base station so that said mobile station can access the network).

Schmutz does not teach automatically determining whether to allocate a wireless relay resource to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter that is presently within communications range of the base site.

Durrant teaches automatically determining whether to allocate a wireless relay resource to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter that is presently within communications range of the base site (Figure 1, Column 3 lines 2 – 11, Column 4 lines 4 – 8. Column 4 lines 12 – 38, when the mobile station is in an area that is remote from the base station the base station will allocate the repeater to increase the data rate so that the mobile station can transmit and receive at the high data rate enjoyed by said mobile station when said mobile station is located close to said base station).

Schmutz and Durrant both teach a GSM based system that uses translating repeaters thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the allocation method taught by Durrant in the base station of Schmutz for the purpose of enabling remote mobile stations to receive and transmit at high data rates as taught by Durrant.

Regarding Claim 2, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches receiving a wireless message from the transmitter that includes an indication of a need to transmit the wireless message to the base site (Section 0037 lines 10 – 12).

Regarding Claim 3, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches receiving the wireless message, at least in part, via a control channel (Section 0037 lines 7 – 10).

Regarding Claim 4, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches determining that a present wireless communication path between the transmitter and the base site will not likely support a desired effective data rate (Figure 1, Column 4 lines 12 – 38, when the mobile station is in a remote area the wireless link will not support a high data rate thus the repeater will be allocated).

Regarding Claim 5, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 4. Durrant further teaches using information regarding link channel quality for at least one transmission from the base site to the transmitter

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(Column 4 lines 4 – 8, Column 4 lines 12 – 19, the SIR and SNR are a channel quality metrics).

Regarding Claim 6, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches automatically determining whether to allocate a plurality of wireless relay resources to thereby at least attempt to increase the quality of service (Column 4 lines 12 – 38).

Regarding Claim 7, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 6. Durrant further teaches allocating selected ones of the pluralities of wireless relay resources to at least attempt to increase the quality of service (Column 4 lines 12 – 38).

Regarding Claim 8, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 7. Durrant further teaches allocating some but not all presently available wireless relay resources (Column 4 lines 12 – 38, a plurality of repeaters can be some but not all repeaters).

Regarding Claim 9, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches automatically determining whether to allocate a wireless relay resource that utilizes at least one carrier resource that is otherwise also shared by a communication system that includes the base site to effect direct communications between the base site and member communication units (Section 0038 lines 1 – 5, the traffic time slots are carrier resources that effects direct communications between the base station and the mobile station, said traffic time slots are also used by the repeater).



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Regarding Claim 10, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches automatically determining whether to allocate a wireless relay resource that utilizes at least one carrier resource that is not otherwise also shared by a communication system that includes the base site to effect direct communications between the base site and member communication units (Section 0031 lines 1 – 5, the carrier resource is the translated frequency of the wireless link between the base station and repeater, the direct link between the base station and the mobile station is a different frequency than said link between said repeater and said base station).

Regarding Claim 11, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter (Column 4 lines 12 – 38, the base station will allocate the repeaters to relay packets of data, which are portions of data).

Regarding Claim 12, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 11. Schmutz further teaches providing the instruction via a control channel (Section 0038 lines 1 – 14).

Regarding Claim 13, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 12. Schmutz further teaches providing the instruction via a control channel that is also used to exchange at least some control information between the base site and the transmitter (Section 0038 lines 1 – 14, the SDCCCH is in the direct

link between the base station and the mobile station, said SDCCH is also used in the link between the base station and repeater).

Regarding Claim 14, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 11. Durrant further teaches providing at least one of: identifying information regarding the transmitter; - a particular transmission parameter to expect when receiving the transmission from the transmitter; - a particular transmission parameter to use when relaying the transmission; - identifying information regarding a particular channel to monitor to receive the transmission from the transmitter; - identifying information regarding a particular channel to utilize when relaying the transmission to the base site (Column 4 lines 12 – 38, the base station will allocate a repeater to relay data if a mobile station is in a remote location, in order for said base station to allocate the repeater for said mobile station said base station must provide the identity of said mobile station to said repeater so that said repeater will relay data from the correct mobile station).

Regarding Claim 15, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches determining to accept transmissions from a relay resource that automatically relays received transmissions from the transmitter (Column 4 lines 12 – 38).

Regarding Claim 16, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 15. Durrant further teaches determining to accept transmissions from a relay resource that automatically relays received transmissions from the transmitter only when the received transmissions meet at least a

predetermined level of signal quality (Column 4 lines 12 – 38, when the SNR and SIR are at a particular level the repeater will relay the data).

Regarding Claim 17, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches using relayed transmissions from a plurality of relay resources to receive the transmission from the transmitter (Column 4 lines 12 – 38).

Regarding Claim 18, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 17. Durrant further teaches combining received portions of the relayed transmissions from various of the plurality of relay resources to reconstruct the transmission (Column 4 lines 12 – 38, information that is transmitted by the mobile station to the base station is broken down into packets of data, in order for said information transmitted by said mobile station to be reconstructed the packets of data that comprise said information will be combined).

Regarding Claim 19, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 17. Durrant further teaches combining and decoding received portions of the relayed transmissions from various of the plurality of relay resources to reconstruct the transmission (Column 4 lines 12 – 38, the information that is relayed modulate an RF carrier, the base station will demodulate and decode the signal and combine the packets that comprise the transmitted information for reconstruction of said information).

Regarding Claim 20, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches at a wireless relay resource,

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combining received portions of relayed transmissions from the transmitter to reconstruct the transmission (Column 4 lines 12 – 38, the information that is transmitted by the mobile station to the base station is broken down into packets of data, said information is received by the repeater and relayed to the base station thus said repeater can combine said packets that comprise said information for the reconstruction of said information).

Regarding Claim 21, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 20. Durrant further teaches combining received portions of relayed transmissions from the transmitter to reconstruct the transmission (Column 4 lines 12 – 38, the information that is transmitted by the mobile station to the base station is broken down into packets of data, said information is received by the repeater and relayed to the base station thus said repeater can combine said packets that comprise said information for the reconstruction of said information). Schmutz further teaches decoding received information (Section 0041).

Regarding Claim 22, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 19. Durrant further teaches at the wireless relay resource, relaying a reconstructed transmission to the base site (Column 4 lines 12 – 38).

Regarding Claim 23, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 17. Durrant further teaches combining received portions of relayed transmissions from at least one wireless relay resource with portions of transmissions from the transmitter to reconstruct the transmission (Column 4 lines 12 – 38, information that is transmitted by the mobile station to the base station is broken

down into packets of data, in order for said information transmitted by said mobile station to be reconstructed the packets of data that comprise said information will be combined).

Regarding Claim 25, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 23. Durrant further teaches combining received portions of relayed transmissions from at least one wireless relay resource with previously stored portions of transmissions from the transmitter to reconstruct the transmission (Column 4 lines 12 – 38, the information that is transmitted by the mobile station to the base station is broken down into packets of data, in order for said information transmitted by said mobile station to be reconstructed the packets of data that comprise said information will be stored until all packets are received and then combined).

Regarding Claim 26, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches a wireless relay resource that comprises a waveform processing relay resource (Figure 4, Section 0041, the waveform processor is the DSP 42A).

Regarding Claim 27, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches a demodulation processing relay resource (Section 0041).

Regarding Claim 28, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches a demodulation and decoding processing relay resource (Section 0041).

Regarding Claim 29, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches negotiating a data rate for the transmitter to utilize when transmitting the transmission (Column 4 lines 12 – 38).

Regarding Claim 30, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches determining a need to receive a wireless transmission comprising bearer data and not system control information that corresponds to resource allocation (Section 0036 lines 1 – 7, the traffic sub-channels will contain bearer data).

Regarding Claim 31, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches allocating a communication resource to the relay resource (Column 4 lines 12 – 38, the repeater relays the data packets to the base station thus said repeater will have a communication means).

Regarding Claim 36, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Durrant further teaches automatically determining whether to allocate a wireless relay resource to thereby at least attempt to increase a quality of service to support a wireless transmission from the base site to the transmitter that is presently within communications range of the base site (Figure 1, Column 3 lines 2 – 11, Column 4 lines 4 – 8. Column 4 lines 12 – 38).

Regarding Claim 37, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 36. Durrant further teaches automatically determining whether to allocate a wireless relay resource to thereby at least attempt to increase a quality of service to support a wireless transmission from the base site to the transmitter

that is presently within communications range of the base site but channel conditions for wireless transmissions from the base site to the transmitter are determined to be unacceptable due, at least in part, to channel characteristics (Column 4 lines 12 – 38, when the SNR and SIR are low the channel conditions will be unacceptable and the data rate will be low thus the repeater will be allocated to increase said data rate).

Regarding Claim 38, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 37. Schmutz further teaches delay spread characteristics (Section 0032 lines 1 – 4, delay spread occurs as a result of multipath).

Regarding Claim 39, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches allocating a wireless relay resource that couples via a wireless link to the base site (Section 0031 lines 1 – 5).

5. Claims 24, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmutz (US 2002/0031621) in view of Durrant et al. (US 6,501,955) as applied to Claims 23, 1 above, and further in view of Fischer et al. (US 6,353,728).

Regarding Claim 24, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 23. Durrant further teaches combining received portions of relayed transmissions from at least one wireless relay resource with portions of transmissions from the transmitter to reconstruct the transmission (Column 4 lines 12 – 38, information that is transmitted by the mobile station to the base station is broken down into packets of data, in order for said information transmitted by said mobile

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station to be reconstructed the packets of data that comprise said information will be combined).

Schmutz in view of Durrant does not specifically teach portions of redundant transmissions.

Fischer teaches portions of redundant transmissions (Column 6 lines 51 – 54).

Schmutz in view of Durrant and Fischer teach a wireless system that transmits data packets thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ARQ method taught by Fischer in the wireless system of Schmutz in view of Durrant for the purpose of providing reliable packet delivery as taught by Fischer.

Regarding Claim 34, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz further teaches a wireless relay resource that will: demodulate and decode the transmission from the transmitter to provide decoded information (Section 0041); re-encode the decoded information to provide re-encoded information; and - transmit the re-encoded information to the base site (Section 0042).

Schmutz in view of Durrant does not specifically teach determining whether the transmission has been likely correctly received.

Fischer teaches determining whether the transmission has been likely correctly received (Column 6 lines 51 – 54, the ARQ method uses an acknowledgement notification when a data packet is received correctly).

Schmutz in view of Durrant and Fischer teach a wireless system that transmits data packets thus it would have been obvious to one of ordinary skill in the art at the



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time the invention was made to use the ARQ method taught by Fischer in the wireless system of Schmutz in view of Durrant for the purpose of providing reliable packet delivery as taught by Fischer.

Regarding Claim 35, Schmutz in view of Durrant and in further view of Fischer teaches all of the claimed limitations recited in Claim 34. Schmutz further teaches demodulate and decode the transmission from the transmitter to provide decoded information (Section 0041); re-encode the decoded information to provide re-encoded information; and - transmit the re-encoded information to the base site (Section 0042), further includes: - not transmitting to the base site any relayed transmissions (Section 0031 lines 1 – 5, the repeater will not relay any signals when said are not transmitted to said repeater)

Fischer further teaches determining whether the transmission has been likely correctly received (Column 6 lines 51 – 54, the ARQ method uses an acknowledgement notification when a data packet is received correctly).

6. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmutz (US 2002/0031621) in view of Durrant et al. (US 6,501,955) as applied to Claim 31 above, and further in view of Dinkins (5,633,876).

Regarding Claim 32, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 31. Durrant further teaches a temporal directive assigned to the transmitter to support the transmission from the transmitter (Column 4 lines 12 – 38, the information that is transmitted by the mobile station comprises packets of data, said

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packets are transmitted one at a time thus there will be a temporary storage for the subsequent packets that need to be transmitted).

Schmutz in view of Durrant does not specifically teach providing a relayed transmission temporal directive that is subsequent to a temporal directive as is assigned to the transmitter to support the transmission from the transmitter.

Dinkins teaches a relayed transmission temporal directive (Figure 2, Column 3 lines 36 – 39).

Schmutz in view of Durrant and Dinkins teaches a repeater that forwards data packets thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the store and forward method in the repeater of Schmutz in view of Durrant for the purpose of reliably relaying said data packets as taught by Dinkins.

Regarding Claim 33, Schmutz in view of Durrant and in further view of Dinkins teaches all of the claimed limitations recited in Claim 32. Durrant further teaches allocating a time slot to support the relayed transmission that is subsequent to a time slot as is assigned to the transmitter for the transmission (Column 4 lines 12 – 38, GPRS and EDGE are GSM based systems, GSM systems use TDMA thus there will be time slots allocated).

7. Claim 40 is rejected under 35 U.S.C 103(a) as being unpatentable over Schmutz (US 2002/0031621) in view of Durrant et al. (US 6,501,955) as applied to Claim 1 above, and further in view of Argyroudis (5,892,758).

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Regarding Claim 40, Schmutz in view of Durrant teaches all of the claimed limitations recited in Claim 1. Schmutz in view of Durrant does not teach allocating a wireless relay resource that couples via a wireline link to the base site.

Argyroudis teaches allocating a wireless relay resource that couples via a wireline link to the base site (Column 8 lines 1 – 5).

Schmutz in view of Durrant and Argyroudis teach a repeater that forwards signals to a base station thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the wireline link taught by Argyroudis with the repeater of Schmutz in view of Durrant as an alternative means for forwarding a signal to said base station.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Raymond S. Dean  
November 9, 2004

  
**NAY MAUNG**

**SUPERVISORY PATENT EXAMINER**